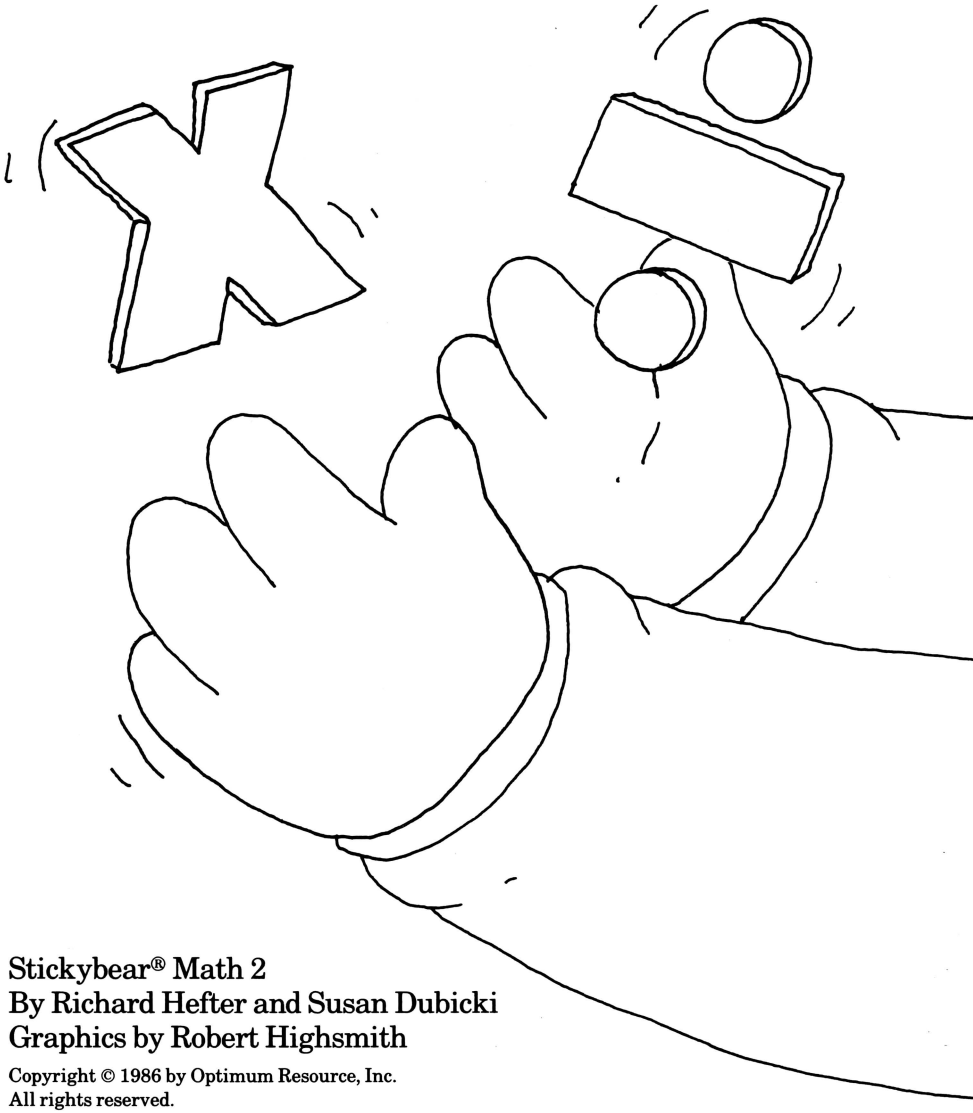
STICKYBEAR MATH 2

Multiplication and Division

USER'S GUIDE



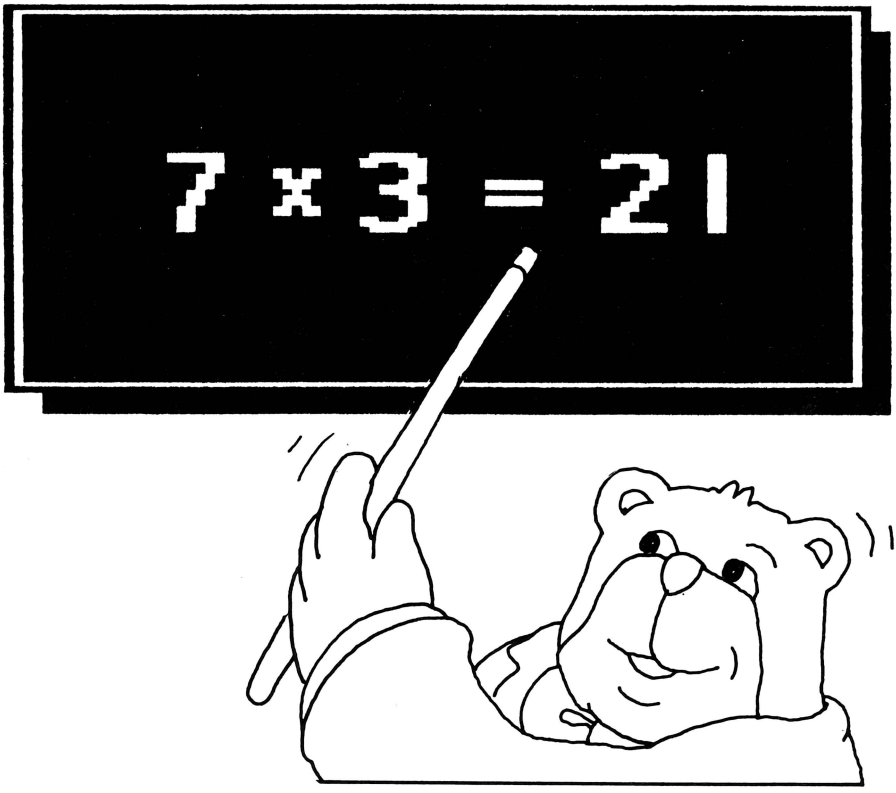
Stickybear® Math 2

By Richard Hefter and Susan Dubicki
Graphics by Robert Highsmith

Copyright © 1986 by Optimum Resource, Inc.
All rights reserved.
Printed in the United States of America.
No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, or otherwise without the prior written consent of the publisher.

Published by Optimum Resource, Inc., Norfolk, Connecticut. Distributed by Weekly Reader Family Software, 245 Long Hill Road, Middletown, CT 06457.

Stickybear is the registered trademark of Optimum Resource, Inc. Apple, Apple II Plus, Apple IIc and Apple IIe are registered trademarks of Apple Computer, Inc.



What's Inside

About Stickybear Math 2 3
Learning With Stickybear Math 2 4
How To Use Stickybear Math 2 5
Return 6
To Play 7
Teacher/Parent Option 8
Report Card 10
Cursor Movement 12
Instructions for Students 13
Learning the Program 13
Table of Levels 14
Stickybear Math 2 Levels 15
List of Commands 16

About Stickybear Math 2

The Stickybear Math 2 program is designed to provide focused drill and practice in basic multiplication and division for children ages seven and up.

The program adjusts automatically to meet the individual needs of each user. A level adjustment that the student never sees constantly monitors progress and adjusts up or down accordingly. This allows each student to proceed at a comfortable pace, challenged but not frustrated.

Teachers and parents can further tailor the program to meet each student's needs. The Teacher/Parent Option section of this Guide gives step-by-step directions on how to assign the level and type of problem to be presented.

Colorful animations appear on the screen when children answer the problems correctly. The desire to view the next animation is a powerful incentive to continue solving problems.

Problems at lower levels are enhanced by animated groups of objects that help with counting skills.

2 × 3 = 6

As an aid to group management, the program keeps track of the names, levels reached, scores, and types of problems assigned for up to 40 students. Names may be added or dropped at any time. All instructions and answers are entered via the keyboard.

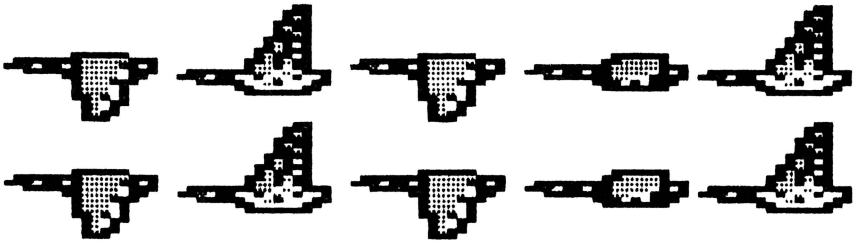
The colorful Stickybear Family poster included will brighten any computer corner. The set of Stickybear stickers are pure fun!

Learning With Stickybear Math 2

Multiplication and Division Stickybear Math 2 provides enjoyable drill and practice in basic multiplication and division. The program uses advanced learning technology by automatically adjusting the problem difficulty to each student's success rate. If a student is answering the problems correctly, the program will increase the level of difficulty while still presenting some problems at the current level for reinforcement.

When enough trial problems from the next level have been answered correctly, the program will move to that higher level. On the other hand, the program will move to the next lower level if the student is unsuccessful at the current one. The internal monitor moves the level scale unbeknownst to the user. The student is not aware that the program is adjusting to his particular level and subtly raising the level by focusing on areas that need improvement.

Checking the student's progress with the Report Card option will point out areas of special instructional need. Teachers and parents can adjust the type and nature of the problems to fine-tune the program for each student. The result is more math and less frustration.



Family Fun Stickybear Math 2's hi-resolution graphics, animated objects, funny sounds, and interesting movements combine to provide endless entertainment. Even older children (and adults) who have already mastered basic multiplication and division will enjoy playing Stickybear Math 2.

Exploration and Discovery Young children are natural scientists. They love to observe, experiment, and explore. Stickybear Math 2 is designed to stimulate these young explorers. They can use the program themselves after a little coaching on cursor movement and ending the session.

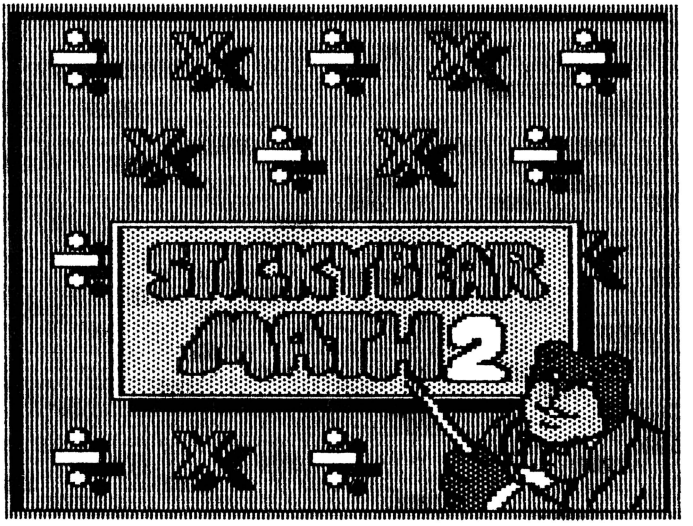
How To Use Stickybear Math 2

To Begin

Stickybear Math 2 will run on any Apple, Apple II, Apple II Plus, Apple IIc or Apple IIe with at least 48K and a disk drive.

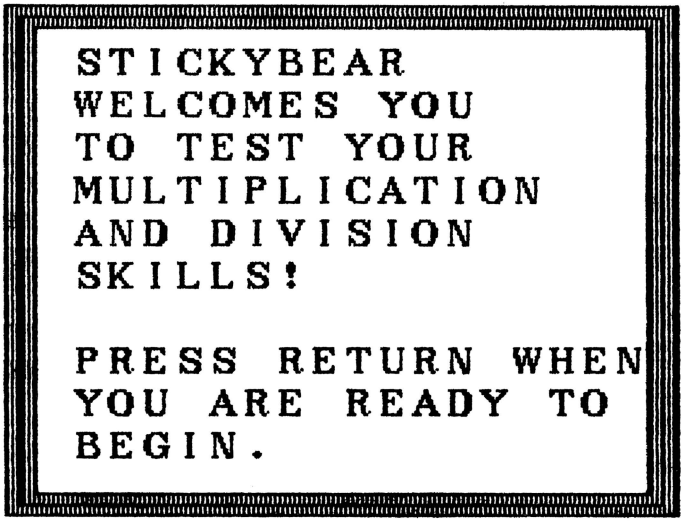
If you have an Apple IIc or an Apple IIe, make sure the CAPS LOCK key is down.

To start, put the program disk into the drive and turn on your Apple. If you have Autostart, you will see the title panel displayed.



If your Apple does not have the Autostart ROM, you will see the monitor cursor *. Type 6, then type P while holding down the key marked CTRL (6 CTRL P), then press the RETURN key.

After the title panel animation you will see:



This welcome panel is the only position from which teachers and parents can enter the option sections. There are three choices from the welcome panel. Two of them allow teachers and parents to view and adjust the program; the third allows the student to play.

Control C (CTRL C) Teacher/Parent Option
Press Control while pressing C (CTRL C) to enter the Teacher/Parent Option section described below.

Control R (CTRL R) Report Card
Press Control while pressing R (CTRL R) to enter the Report Card section described below.

RETURN

Press the RETURN key while in the welcome screen to begin playing Stickybear Math 2 without making any new changes to the type and level of problems to be presented. Any previous changes will, of course, remain intact.

To Play

If you press RETURN when the welcome panel is on screen, you will be asked to enter a name (no more than 11 letters, please) and press RETURN. Pressing the ESC key will return you to the welcome panel.

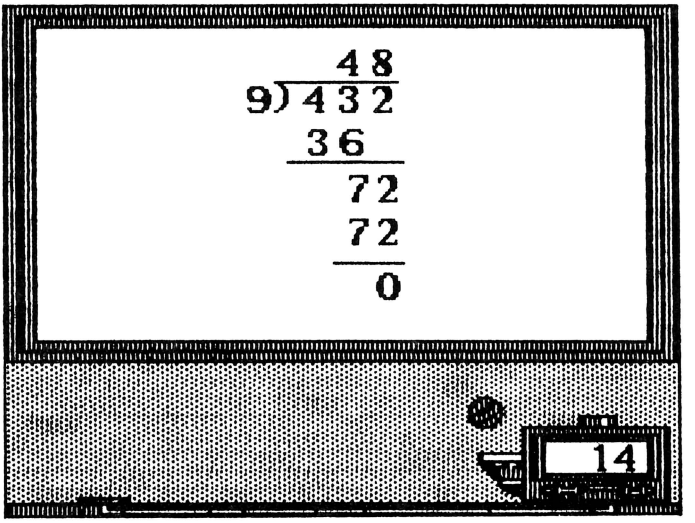
Note: Students with the same first name should add a last initial so the program can tell them apart.

If the name is not on the program's list of previous players, the problems will start at Level 1, with all options on, and will progress upward as the student succeeds.

If the name was entered earlier, the program will start at the last level reached and with the variations (if any) set in the Teacher/ Parent Option section.

If you decide to skip the Teacher/Parent Option section, Stickybear Math 2 will automatically present a mix of all available types of problems.

Stickybear Math 2 will now present a series of problems that the student may solve by typing in the correct numbers (see Cursor Movement) and RETURN. Each correct answer will earn points in the box at the bottom of the screen and result in an animated sequence.



CONTROL Z End the Session
After the student has finished playing Stickybear Math 2, the session can be ended and the results saved to the disk by pressing the Control key while pressing the Z key (CTRL Z). Note: Control Z can be used only when a new problem is on the screen, before it has been answered.

Control Q (CTRL Q) Quiet
Press the Control key while pressing the Q key (CTRL Q) to turn off the sound for quiet play. Apple IIc users can simply turn down the adjustment knob located on the left side of the machine. You can use this option any time there is a problem on the screen.

Teacher/Parent Option

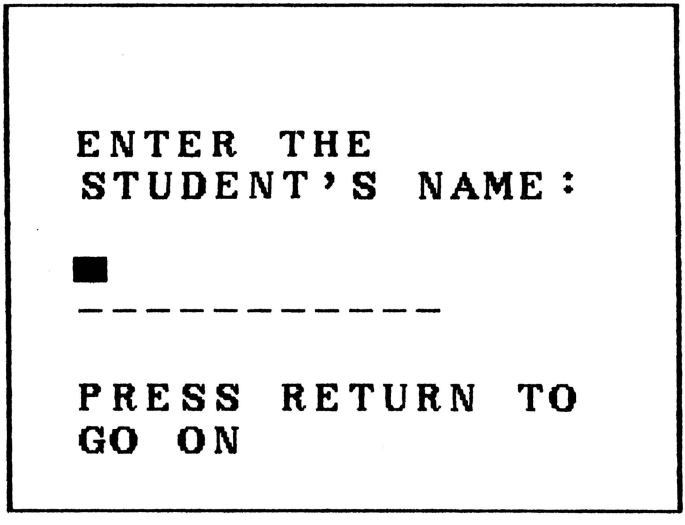
Press Control C (CTRL C) while the welcome panel was on screen, to enter the Teacher/Parent Option section. This section allows you to determine the type and level of problem presented to each student. You can make individual assignments, then store them on the disk for up to 39 students (the 40th name is always reserved for any new student not on the list). When the class, family, or neighborhood plays Stickybear Math 2, each student will be presented with the type and level of problem you chose for that individual.

You will see:

```
YOU CAN CUSTOMIZE
THE STICKYBEAR
MATH 2
PROGRAM FOR EACH
STUDENT.

PRESS RETURN TO GO
ON OR ESC TO GO
BACK TO THE START
OF THE PROGRAM.
```

Press RETURN to continue. You will see:



Type the student's name (11 or fewer letters), then press RETURN. The Teacher/Parent Option section will present you with six choices to make. Press the appropriate number or answer yes (Y) or no (N) to identify your response, then press RETURN. You will be able to review and revise your selections after the sixth choice.

The options are these:

1. SELECT THE NUMBER OF TRIES. Enter a number from 1 to 4 to specify how many incorrect answers the program will accept before the computer displays the correct answer and registers a missed answer on the progress report. The program default for this choice is 2. Younger children will feel comfortable with more tries. Set the option to 1 try for more accomplished math wizards or for a quiz with accurate per-problem scoring.

2. SELECT THE LEVEL OF DIFFICULTY. Enter a number from 1 to 36 to select the level of difficulty at which the program will begin for this student. Remember, Stickybear Math 2 will adjust itself up or down as the student solves the problems. See the Table of Levels for a description of the problems presented at each level and the skills involved.

3. MULTIPLICATION. Type Y to include multiplication problems. Press N to have only division problems presented.

4. DIVISION. You may select either multiplication or division or both. You must choose at lease one. Type Y or N.

5. MISSING FACTORS. You may choose to include problems that require the student to fill in the missing middle of a problem ($3 \times \_\_ = 12$). Type Y or N.

6. ANSWERS ONLY. You may choose to enter the answers only, without the intermediate steps, for upper level problems.

$$\begin{array}{r} 81\ \text{R}6 \\ 7\overline{)573} \end{array} \qquad \text{instead of} \qquad \begin{array}{r} 81\ \text{R}6 \\ 7\overline{)573} \\ \underline{56} \\ 13 \\ \underline{7} \\ 6 \end{array}$$

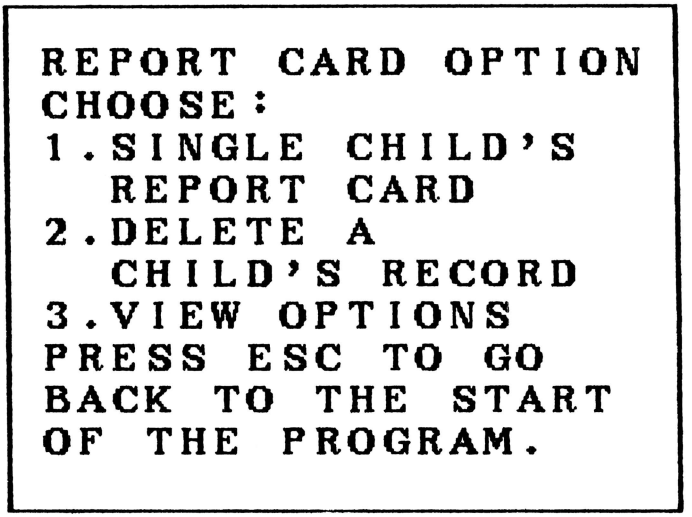
When you have completed the sixth choice, you will be shown a review screen. Type the number of any option you wish to revise or press RETURN to accept the choices as made and return to the welcome panel. Pressing the ESC key will return you to the welcome panel without changing the options for that student.

You may press Control C (CTRL C) to customize the program for another student. The Teacher/Parent Options can be changed as often as desired to increase variety and maintain interest.

Report Card

Press Control while pressing R (CTRL R) while the welcome panel is on screen to get the Report Card section. The Report Card enables you to track and store the individual assignments and progress reports for up to 39 students (position 40 is wiped out whenever a new and previously unlisted student plays).

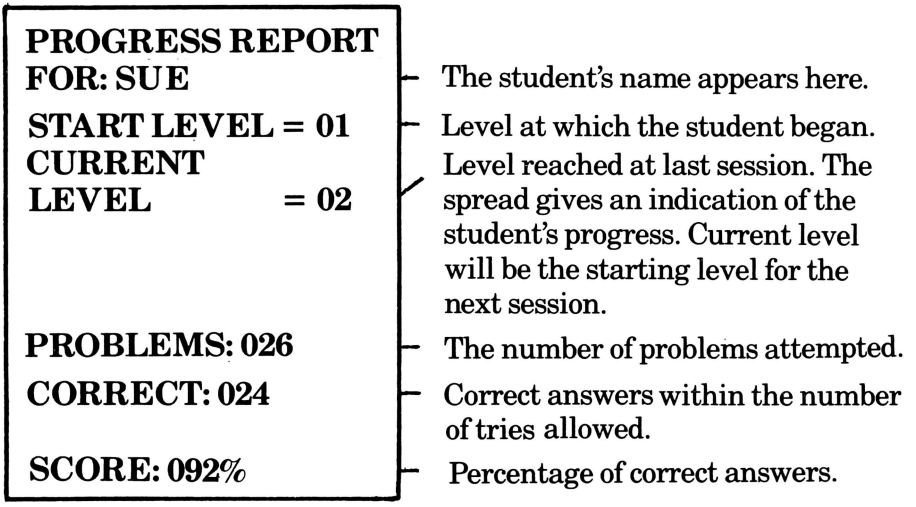
You will see:



Press a number from 1 to 3 to select an option, or press ESC to return to the welcome screen. Pressing the ESC key will cancel any changes you have made in the Report Card section.

Option 1 presents a list of the students whose names are stored on the disk and allows you to view the result of the last session for any student. Select the number of the student whose record you wish to review.

The progress report screen contains a variety of information.


PROGRESS REPORT
FOR: SUE
START LEVEL = 01
CURRENT
LEVEL = 02
PROBLEMS: 026
CORRECT: 024
SCORE: 092%
The student's name appears here.
Level at which the student began.
Level reached at last session. The spread gives an indication of the student's progress. Current level will be the starting level for the next session.
The number of problems attempted.
Correct answers within the number of tries allowed.
Percentage of correct answers.

Note: This information, which describes only the preceding session's results, is updated each time the student plays with the program.

Option 2 allows you to delete any records you wish. Enter the student name you wish to delete.

Option 3 allows you to review and change the Teacher/Parent Options for any student whose name appears on the list. Select the number of the student whose options you wish to revise. When the Teacher/Parent Option review screen appears, select the number of the option you wish to change.

IMPORTANT: The Report Card section will store information from one session to the next ONLY if the Control Z (CTRL Z) command was used by the student to end the session. When students play Stickybear Math 2 at a later date, the stored information will be read by the computer. As long as names are entered the same way each time, the program will start at the appropriate level and with all selected Teacher/Parent Options intact.

Cursor Movement

Stickybear Math 2 presents the cursor at the leftmost position so the problem may be answered naturally:

$4 \times 3 =$ ■
$4 \times 3 = 1$■
$4 \times 3 = 12$

The cursor may be moved from left to right, using the arrow keys. To change the answer, use the arrow keys to position the cursor over the number to be changed. Type in the new number, check it, then press RETURN.

Long division problems require some extra explanation about the cursor movement. After you enter each number, press the RETURN key to have the computer accept that number. If you find an error before you have completed the problem, press the ESC key. Each time you press the ESC key the cursor will back up one step. Type in the new number, press RETURN, and proceed with the next step. This only works with long division, when you must enter the intermediate steps.

If any part of the problem solution is incorrect, the computer will display the correct answer and highlight any incorrect parts of the solution.

Instructions for Students

If you want students to load the disk themselves, explain each step carefully. Demonstrate the procedure for the first session or two. Have the students tell you the next step.

Have students practice the procedure several times under your supervision. Be sure to demonstrate how to hold the disk. Stress the importance of being careful. The disk should be held only by the end with the picture. It should not be bent or folded. Remember to show how to put the disk away after each session.

Remind students to make sure they enter two-digit answers in the correct order and use the Control Z (CTRL Z) command to end each session in order to save the Report Card information.

Learning the Program

Children learn best when experimenting by themselves. Try to resist that almost overwhelming impulse to intervene in the discovery process. You can have your turn later!

As mentioned earlier, most children should need only a little coaching on cursor movement and ending the program. If more assistance is needed, try phrasing your suggestion in question form. If children hesitate, ask, "What do you think will happen if you press the arrow key?" By making suggestions in question form, you allow children to stay in control.

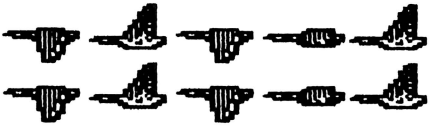
Children often experiment with the program in ways difficult for adults to understand. Some children may appear to be randomly pressing keys when they are actually testing the "rule" that some keys produce no effect. Some children like to watch the same display much longer than most adults would. Others press the keys too quickly for the computer to register. Try not to impose "adult" order on children's experimentation. You might interrupt the learning process.

Math Is Everywhere After children have become familiar with the concepts of multiplication and division, look for examples in their environment. "We have five children at the party. They would each like to have three pieces of candy. How many pieces do we need to give out?"

Some children will enjoy these activities at this point. Others will prefer to continue exploring Stickybear Math 2 on their own. Be patient. Introduce activities in small doses. For younger students, multiplying and dividing five or six problems at a session may be enough.

Remember, the Stickybear Math 2 program was designed for children ages seven and up. Younger children have a shorter attention span and different interest levels than older children.

Stickybear Math 2 gives children an introduction to computers, encourages their sense of exploration and discovery, reinforces the skills of multiplication and division, and is a lot of fun!



$$\begin{array}{r} 5 \\ \times\ 2 \\ \hline 10 \end{array}$$

Table of Levels

This table illustrates the order in which the problem-difficulty levels are presented. Students do not see the levels, as the program adjusts itself automatically.

You can use the table to select the starting place for a particular student or session. The highest level reached in each session is displayed in the progress report. Check the table to see which skills have been mastered so far and which should be emphasized in future Teacher/Parent Option assignments.

If no other level has been set via the Teacher/Parent Option section, the program begins at Level 1. This may cause older children to lose interest.

Note: Some of the options at each level may be deselected via the Teacher/Parent Option section.

STICKYBEAR MATH 2 LEVELS

LEVEL 1: 2 and 3 as factors
LEVEL 2: 4 and 5 as factors
LEVEL 3: Multiplication properties: the order property, the 1 property, and the 0 property
LEVEL 4: 6 and 7 as factors
LEVEL 5: Dividing by 2 and 3
LEVEL 6: 8 and 9 as factors
LEVEL 7: Dividing by 4 and 5
LEVEL 8: Multiply three factors, all single digits, using the grouping theory
LEVEL 9: Division properties
LEVEL 10: Missing factors
LEVEL 11: Dividing by 6 and 7
LEVEL 12: Dividing by 8 and 9
LEVEL 13: Use multiplication facts to find products of multiples of 10, 100, 1000.
LEVEL 14: Multiplying three factors when one factor is a multiple of 10, using the grouping theory
LEVEL 15: Multiply one-digit factors by two-digit factors with or without trading 1's to find two-digit products.
LEVEL 16: Multiply one-digit factors by two-digit factors trading 1's and 10's to find three-digit products.
LEVEL 17: Multiply three-digit factors and one-digit factors with one trade to get three- or four-digit numbers.
LEVEL 18: Multiply one-digit factors by three- or four-digit factors with two or more trades or no trades writing products of three-, four-, or five-digits.
LEVEL 19: To divide mentally two- and three-digit multiples of 10 by one-digit divisors.
LEVEL 20: Divide one- and two-digit numbers by one-digit divisors to find one-digit quotients with remainders.
LEVEL 21: Multiply three- and four-digit factors containing 0's by one-digit factors to get four- or five-digit answers.
LEVEL 22: Divide two-digit numbers by one-digit numbers to get two-digit quotients. (with and without remainders)
LEVEL 23: Multiplying multiples of 10.

LEVEL 24: Divide three-digit numbers by one-digit numbers to get three-digit quotients. (with and without remainders)

LEVEL 25: Divide three-digit numbers by one-digit numbers to find two- or three-digit quotients. (with and without remainders)

LEVEL 26: Divide three-digit numbers by one-digit divisors to find two- or three-digit quotients with 0 in the quotients.

LEVEL 27: Multiply two-digit numbers and two-digit numbers to find three- or four-digit answers.

LEVEL 28: Multiply three-digit numbers and two-digit numbers to find four- or five-digit answers.

LEVEL 29: Divide a two- or three-digit number by a multiple of 10 to get a one-digit quotient with and without a remainder.

LEVEL 30: Divide a two-digit number by a two-digit number to get a one-digit quotient with a remainder.

LEVEL 31: Divide a three-digit number by a two-digit number to get a one-digit quotient.

LEVEL 32: Multiply two-digit factors by four-digit factors to find five- and six-digit answers.

LEVEL 33: Multiply three-digit factors by three-digit factors to find five- and six-digit products.

LEVEL 34: Divide three-digit numbers by multiples of 10 to find two-digit quotients with and without remainders.

LEVEL 35: Divide three-digit numbers by two-digit numbers to find two-digit quotients.

LEVEL 36: Divide by a two-digit divisor to get a three-digit quotient.

LEVEL 37: Divide by a two-digit divisor to get a three-digit quotient with one or two 0's.

LIST OF COMMANDS

CTRL C To Teacher/Parent Option from welcome screen.
CTRL R To Report Card from welcome screen.
RETURN To start playing from welcome screen.
CTRL Z To end a session and record score.
CTRL Q To turn off sound.

Weekly Reader
Family Software

Middletown, CT
06457

4432